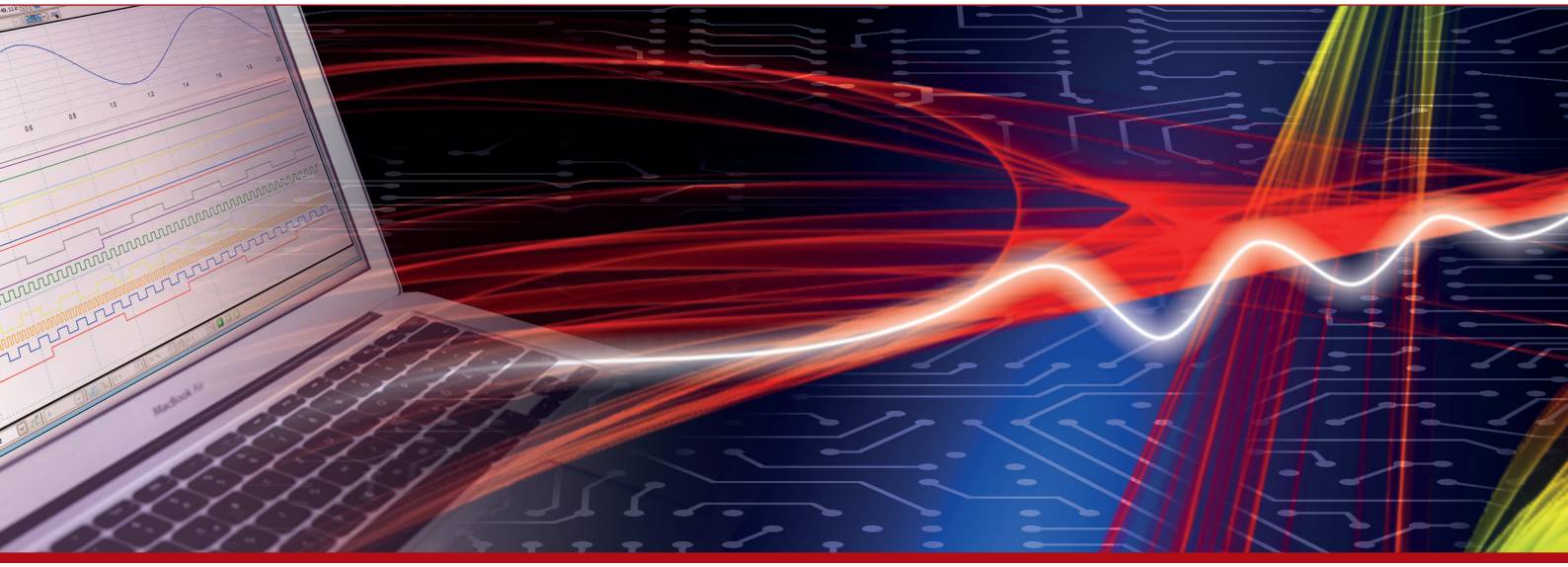
Product Datasheet - Technical Specifications



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Tel.: **+49 - 81 41 - 52 71-0**

FAX: **+49 - 81 41 - 52 71-129**

E-Mail: **sales@meilhaus.com**

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www.meilhaus.com/en/infos/download.htm

Meilhaus Electronic GmbH
Am Sonnenlicht 2
82239 Alling/Germany

Tel. **+49 - 81 41 - 52 71-0**
Fax **+49 - 81 41 - 52 71-129**
E-Mail **sales@meilhaus.com**

www.meilhaus.de

Chapter9 Technical Specification

This chapter introduces such main technical parameters as rated voltage, rated current and rated power, usage and storage environment and temperature of the IT6400 series power supply.

Parameters		IT6402		
		CH1		CH2
Rated values (0 °C-40 °C)	Voltage	-6V - 0V , 0 - 6V		0 - 6V
	Current	±2A		±2A
	Power	12W		
	Resistance	0 - 1 Ω		
Load regulation ±(%of Output+Offset)	Voltage	≤0.01%+2mV		
	Current	≤0.05%+1mA		
Line regulation ±(%of Output+Offset)	Voltage	≤0.02%+2mV		
	Current	≤0.05%+1mA		
Setup resolution	Voltage	1mV		
	Current	0.1mA		
	OVP	10 mV		
	Resistance	1mΩ		
Readback resolution	Voltage	1mV		
	Current	2A Rang	0.1mA	
		5mA Rang	100nA [4]	
Setup accuracy （one year, 25°C±5°C) ±(%of Output+Offset)	Voltage	≤0.02%+3mV		
	Current	≤0.05%+2mA [3]		
	OVP	0.5V [1]		
	Resistance	≤0.1%+3mΩ		
Readback accuracy （one year, 25°C±5°C) ±(%of Output+Offset)	Voltage	≤0.02%+2mV		
	2A Range	≤0.05%+2mA		
	5mA Rang	≤0.05%+2uA [4]		
Ripple (20Hz -20MHz)	Voltage	≤ 3mVp-p / 1 mV rms		
	Current	≤1mArms		
Setup Temp.coefficient (%of Output+Offset)/℃	Voltage	0.005%+0.2mV		
	Current	0.005%+0.2mA		
	OVP	0.01%+50 mV		
	Resistance	0.02%+0.5mΩ		
Readback Temp.coefficient (%of Output+Offset)/℃	Voltage	0.005%+0.2mV		
	Current	2A Rang	0.005%+0.2mA	
		5mA Rang	0.005%+0.3 uA [4]	
Rise time (Fast mode No-load)	Voltage	≤500uS [2]		
Rise time （Fast mode Full-load）	Voltage	≤500uS [2]		
Fall time （Fast mode No-load）	Voltage	≤1mS [2]		
Fall time	Voltage	Change of setting value	≤500uS [2]	

(Fast mode Full-load)		Set output off	≤150uS [2] [6]
Rise time （Full-load）	Current	Fast mode	≤150uS
		Normal mode	≤10mS
Transient Response Time 50%-100% Load change	Fast mode	Recovered to 50 mV	≤50uS
Remote Sense Compensation	1V Per each lead		
Command Response Time (Typical)	5mS		
OVP Response Time	≤100uS		
Impedance of the output terminal （output off）（Typical）	Relay output Normal	150k ohms	
	Relay output Battery[5]	≥ 1 GΩ [5]	
Minimum Resistance	Sink Current Mode	≤ 0.7 Ω	
Setup stability -30min （%of Output +Offset）	Voltage	0.01%+1mV	
	Current	0.01%+1mA	
Setup stability -8h （%of Output +Offset）	Voltage	0.01%+1.5mV	
	Current	0.01%+1.5mA	
Readback stability-30min （%of Output +Offset）	Voltage	0.01%+1mV	
	Current	0.01%+1mA	
Readback stability-8h （%of Output +Offset）	Voltage	0.01%+1.5mV	
	Current	0.01%+1.5mA	
AC Input	Voltage 1	110V±10%	
	Voltage 2	220V±10%	
	Frequency	47HZ-63HZ	
Fuse specification	Voltage 1	5A	
	Voltage 2	3.15A	
Power Factor	0.7 Max		
Maximum input current	5A		
Maximum input apparent power	500VA		
Storage temperature	-10℃~70℃		
Protective function	OVP/OCP/OTP		
standard Interface	GPIB/USB/LAN		
Isolation (output to ground)	100Vdc		
Working temperature	0~40℃		
Dimension (mm)	226mmW*88.2mmH*476.26mmD		
Weight(net)	9Kg		

DVM		
Measurement range	-20V — +20V	
Measurement range (refer to the power supply output terminal)	Output 0V - 20V	< ±35V either input to output+
	Output -20V – 0V	< ±35V either input to output-
Display accuracy	0.02%+3mV	
Display resolution	1mV	
Display Temp.coefficient (%of Intput+Offset)/℃	0.002%+0.2mV	
Display stability-30min （%of Output +Offset）	0.02%+1mV	
Display stability-8 h （%of Output +Offset）	0.02%+2 mV	
Input Common-mode voltage	< 50Vdc to ground	

Common-mode voltage rejection	≥ 80 dB
Input impedance	4.3MΩ ± 1%

[1] Maximum error of OVP precision at power supply terminal under full load.

[2] The output polarity is unchanged, the time that the power output value changes from 10% to 90%.

[3] The Minimum value of CC setting is 2mA.

[4] The current readback accuracy of the 5mA Range is measured under constant voltage mode.

[5] The CH2 doesn't support Relay off function.

[6] Set output off.

Parameters		IT6411		
		High Range		Low Range
Rated values (0 °C-40 °C)	Voltage	±15V		±9V
	Current	±3A		±5A
	Power	45W		
	Resistance	0 - 1 Ω		
Load regulation ±(%of Output+Offset)	Voltage	≤0.01%+2mV		
	Current	≤0.05%+1mA		
Line regulation ±(%of Output+Offset)	Voltage	≤0.02%+2mV		
	Current	≤0.05%+1mA		
Setup resolution	Voltage	1mV		
	Current	0.1mA		
	OVP	10 mV		
	Resistance	1mΩ		
Readback resolution	Voltage	1mV		
	Current	5A Range		0.1mA
		5mA Range		100nA (*4)
Setup accuracy （one year、25°C±5°C) ±(%of Output+Offset)	Voltage	≤0.02%+3mV		
	Current	≤0.05%+2mA (*3)		
	OVP	0.5V (*1)		
	Resistance	≤0.1%+3mΩ		
Readback accuracy （one year、25°C±5°C) ±(%of Output+Offset)	Voltage	≤0.02%+2mV		
	5A Range	≤0.05%+2mA		
	5mA Range	≤0.05%+2uA (*4)		
Ripple (20Hz -20MHz)	Voltage	≤ 3mVp-p / 1 mV rms		
	Current	≤1mArms		
Setup Temp.coefficient (%of Output+Offset)/℃	Voltage	0.005%+0.2mV		
	Current	0.005%+0.2mA		
	OVP	0.01%+50 mV		
	Resistance	0.02%+0.5mΩ		
Readback Temp.coefficient (%of Output+Offset)/℃	Voltage	0.005%+0.2mV		
	Current	5A Range		0.005%+0.2mA
		5mA Range		0.005%+0.3 uA (*4)
Rise time (Fast mode No-load)	Voltage	≤500uS (*2)		

Rise time （Fast mode Full-load）	Voltage	≤500uS (*2)	
Fall time （Fast mode No-load）	Voltage	≤1mS (*2)	
Fall time (Fast mode Full-load)	Voltage	Change of setting value	≤500uS (*2)
	Voltage	Set output off	≤150uS (*2) (*5)
Rise time （Full-load）	Current	Fast mode	≤150uS
		Normal mode	≤10mS
Transient Response Time 50%-100% Load change	Fast mode	Recovered to 50 mV	≤50uS
Remote Sense Compensation	1V Per each lead		
Command Response Time (Typical)	5mS		
OVP Response Time	≤100uS		
Impedance of the output terminal （output off）（Typical）	Relay output Normal	150k ohms	
	Relay output Battery	≥ 1 GΩ	
Minimum Resistance	Sink Current Mode	≤ 0.7 Ω	
Setup stability -30min （%of Output +Offset）	Voltage	0.01%+1mV	
	Current	0.01%+1mA	
Setup stability -8h （%of Output +Offset）	Voltage	0.01%+1.5mV	
	Current	0.01%+1.5mA	
Readback stability-30min （%of Output +Offset）	Voltage	0.01%+1mV	
	Current	0.01%+1mA	
Readback stability-8h （%of Output +Offset）	Voltage	0.01%+1.5mV	
	Current	0.01%+1.5mA	
AC Input	Voltage 1	110V±10%	
	Voltage 2	220V±10%	
	Frequency	47HZ-63HZ	
Fuse specification	Voltage 1	3.15AT	
	Voltage 2	1.6AT	
Power Factor	0.7 Max		
Maximum input current	2A		
Maximum input apparent power	200VA		
Storage temperature	-10℃~70℃		
Protective function	OVP/OCP/OTP		
standard Interface	GPIB/USB/LAN		
Isolation (output to ground)	100Vdc		
Working temperature	0~40℃		
Dimension (mm)	226mmW*88.2mmH*476.26mmD		
Weight(net)	8Kg		

DVM		
Measurement range	-20V — +20V	
Measurement range (refer to the power supply output terminal)	Output 0V - 20V	< ±35V either input to output+
	Output -20V – 0V	< ±35V either input to output-
Display accuracy	0.02%+3mV	
Display resolution	1mV	
Display Temp.coefficient (%of Intput+Offset)/℃	0.002%+0.2mV	
Display stability-30min （%of Output +Offset）	0.02%+1mV	
Display stability-8 h （%of Output +Offset）	0.02%+2 mV	

Input Common-mode voltage	< 50Vdc to ground
Common-mode voltage rejection	≥ 80 dB
Input impedance	4.3MΩ ± 1%

(*1) Maximum error of OVP precision at power supply terminal under full load.

(*2) The output polarity is unchanged, the time that the power output value changes from 10% to 90%.

(*3) The Minimum value of CC setting is 2mA.

(*4) The current readback accuracy of the 5mA Range is measured under constant voltage mode.

(*5) Set output off.

Parameters		IT6411S	
Rated values (0 °C-40 °C)	Voltage	-15V-0V,0-15V	
	Current	±0.1 A	
	Power	1.5 W	
	Resistance	0-20 Ω	
Load regulation ±(%of Output+Offset)	Voltage	≤0.01%+1mV	
	Current	≤0.05%+1mA	
Line regulation ±(%of Output+Offset)	Voltage	≤0.02%+2mV	
	Current	≤0.05%+1mA	
Setup resolution	Voltage	1mV	
	Current	10uA	
	OVP	1 mV	
	Resistance	10mΩ	
Readback resolution	Voltage	1mV	
	Current	100mA Range	1uA
		100uA Range	1nA (*4)
Setup accuracy （one year、25°C±5°C) ±(%of Output+Offset)	Voltage	≤0.02%+3mV	
	Current	≤0.05%+50uA (*3)	
	OVP	0.5V (*1)	
	Resistance	≤0.1%+50mΩ	
Readback accuracy （one year、25°C±5°C) ±(%of Output+Offset)	Voltage	≤0.02%+2mV	
	100mA Range	≤0.05%+50uA	
	100uA Range	≤0.05%+50nA	
Ripple (20Hz -20MHz)	Voltage	≤ 3mVp-p / 1 mV rms	
	Current	≤2uArms	
Setup Temp.coefficient (%of Output+Offset)/℃	Voltage	0.01%+0.2mV	
	Current	0.01%+2uA	
	OVP	0.1%+50mV	
	Resistance	0.02%+5mΩ	
Readback Temp.coefficient (%of Output+Offset)/℃	Voltage	0.01%+0.2mV	
	Current	100mA Range	0.015%+5uA
		100uA Range	0.01%+10nA (*4)
Rise time （No-load）	Voltage	≤1mS (*2)	
Rise time （150R load）	Voltage	≤1mS (*2)	
Fall time （No-load）	Voltage	≤1S (*2)	
Fall time （150R load）	Voltage	Change of setting value	≤1mS (*2)
	Voltage	Set output off	≤0.5mS (*2)(*5)

Transient Response Time 50%-100% Load change	Fast mode 50%-100% LOAD Recovered to 50 mV ≤200uS		
Remote Sense Compensation	1V Per each lead		
Command Response Time (Typical)	5mS		
OVP Response Time	≤300uS		
Impedance of the output terminal （output off）（Typical）	Relay output Normal	130k ohms	
	Relay output Battery	≥ 1 GΩ	
Minimum Resistance	Sink Current Mode	≤ 10 Ω	
Setup stability -30min （%of Output +Offset）	Voltage	0.01%+1mV	
	Current	0.01%+20uA	
Setup stability -8h （%of Output +Offset）	Voltage	0.01%+1.5mV	
	Current	0.01%+50uA	
Readback stability-30min （%of Output +Offset）	Voltage	0.01%+1mV	
	Current	0.01%+30uA	
Readback stability-8h （%of Output +Offset）	Voltage	0.01%+1.5mV	
	Current	0.01%+50uA	
AC Input	Voltage 1	110V±10%	
	Voltage 2	220V±10%	
	Frequency	47HZ-63HZ	
Fuse specification	Voltage 1	3.15AT	
	Voltage 2	1.6AT	
Power Factor	0.7 Max		
Maximum input current	2A		
Maximum input apparent power	80VA		
Storage temperature	-10℃~70℃		
Protective function	OVP/OCP/OTP		
standard Interface	GPIB/USB/LAN		
Isolation (output to ground)	100Vdc		
Working temperature	0~40℃		
Dimension (mm)	226mmW*88.2mmH*476.26mmD		
Weight(net)	8Kg		

DVM		
Measurement range	-20V — +20V	
Measurement range (refer to the power supply output terminal)	Output 0V - 15V	< ±20V either input to output+
	Output -15V – 0V	< ±20V either input to output-
Display accuracy	0.02%+3mV	
Display resolution	1mV	
Display Temp.coefficient (%of Intput+Offset)/℃	0.002%+0.2mV	
Display stability-30min （%of Output +Offset）	0.02%+1mV	
Display stability-8 h （%of Output +Offset）	0.02%+2 mV	
Input Common-mode voltage	< 100Vdc to ground	
Common-mode voltage rejection	4.5MΩ	

(*1) Maximum error of OVP precision at power supply terminal under full load.

(*2) The output polarity is unchanged, the time that the power output value changes from 10% to 90%.

(*3) The Minimum value of CC setting is 50uA.

(*4) The current readback accuracy of the 100uA Range is measured under constant voltage mode.

(*5) Set output off.

Parameters		IT6412			
		CH1		CH2	
Rated values (0 °C-40 °C)	Voltage	±15V	±9V	0-15V	0-9V
	Current	±3A	±5A	±3A	±5A
	Power	45W			
	Resistance	0 - 1 Ω			
Load regulation ±(%of Output+Offset)	Voltage	≤0.01%+2mV			
	Current	≤0.05%+1mA			
Line regulation ±(%of Output+Offset)	Voltage	≤0.02%+2mV			
	Current	≤0.05%+1mA			
Setup resolution	Voltage	1mV			
	Current	0.1mA			
	OVP	10 mV			
	Resistance	1mΩ			
Readback resolution	Voltage	1mV			
	Current	5A Range	0.1mA		
		5mA Range	100nA (*4)		
Setup accuracy （one year, 25°C±5°C) ±(%of Output+Offset)	Voltage	≤0.02%+3mV			
	Current	≤0.05%+2mA (*3)			
	OVP	0.5V (*1)			
	Resistance	≤0.1%+3mΩ			
Readback accuracy （one year, 25°C±5°C) ±(%of Output+Offset)	Voltage	≤0.02%+2mV			
	Current	5A Range	≤0.05%+2mA		
		5mA Range	≤0.05%+2uA (*4)		
Ripple (20Hz -20MHz)	Voltage	≤ 3mVp-p / 1 mV rms			
	Current	≤1mArms			
Setup Temp.coefficient (%of Output+Offset)/℃	Voltage	0.005%+0.2mV			
	Current	0.005%+0.2mA			
	OVP	0.01%+50 mV			
	Resistance	0.02%+0.5mΩ			
Readback Temp.coefficient (%of Output+Offset)/℃	Voltage	0.005%+0.2mV			
	Current	5A Range	0.005%+0.2mA		
		5mA Range	0.005%+0.3 uA (*4)		
Rise time (Fast mode No-load)	Voltage	≤500uS (*2)			
Rise time （Fast mode Full-load）	Voltage	≤500uS (*2)			
Fall time （Fast mode No-load）	Voltage	≤1mS (*2)			
Fall time (Fast mode Full-load)	Voltage	Change of setting value	≤500uS (*2)		
		Set output off	≤150uS (*2) (*6)		
Rise time （Full-load）	Current	Fast mode	≤150uS		
		Normal mode	≤10mS		
Transient Response Time 50%-100% Load change	Fast mode	Recovered to 50 mV	≤50uS		

Remote Sense Compensation	1V Per each lead	
Command Response Time (Typical)	5mS	
OVP Response Time	≤100uS	
Impedance of the output terminal （output off）（Typical）	Relay output Normal	150k ohms
	Relay output Battery	≥ 1 GΩ (*5)
Minimum Resistance	Sink Current Mode	≤ 0.7 Ω
Setup stability -30min （%of Output +Offset）	Voltage	0.01%+1mV
	Current	0.01%+1mA
Setup stability -8h （%of Output +Offset）	Voltage	0.01%+1.5mV
	Current	0.01%+1.5mA
Readback stability-30min （%of Output +Offset）	Voltage	0.01%+1mV
	Current	0.01%+1mA
Readback stability-8h （%of Output +Offset）	Voltage	0.01%+1.5mV
	Current	0.01%+1.5mA
AC Input	Voltage 1	110V±10%
	Voltage 2	220V±10%
	Frequency	47HZ-63HZ
Fuse specification	Voltage 1	5A
	Voltage 2	3.15A
Power Factor	0.7 Max	
Maximum input current	5A	
Maximum input apparent power	500VA	
Storage temperature	-10℃~70℃	
Protective function	OVP/OCP/OTP	
standard Interface	GPIB/USB/LAN	
Isolation (output to ground)	100Vdc	
Working temperature	0~40℃	
Dimension (mm)	226mmW*88.2mmH*476.26mmD	
Weight(net)	9Kg	

DVM		
Measurement range	-20V — +20V	
Measurement range (refer to the power supply output terminal)	Output 0V - 20V	< ±35V either input to output+
	Output -20V – 0V	< ±35V either input to output-
Display accuracy	0.02%+3mV	
Display resolution	1mV	
Display Temp.coefficient (%of Intput+Offset)/℃	0.002%+0.2mV	
Display stability-30min （%of Output +Offset）	0.02%+1mV	
Display stability-8 h （%of Output +Offset）	0.02%+2 mV	
Input Common-mode voltage	< 50Vdc to ground	
Common-mode voltage rejection	≥ 80 dB	
Input impedance	4.3MΩ ± 1%	

(*1) Maximum error of OVP precision at power supply terminal under full load.

(*2) The output polarity is unchanged, the time that the power output value

changes from 10% to 90%.

(*3) The Minimum value of CC setting is 2mA.

(*4) The current readback accuracy of the 5mA Range is measured under constant voltage mode.

(*5) The CH2 doesn't support Relay off function.

(*6) Set output off.

Parameters		IT6412S		
		CH1		CH2
Rated values (0 °C-40 °C)	Voltage	-15V～0V/0～15V		0 ～ 15V [5]
	Current	±0.1 A		±0.1 A
	Power	1.5 W		1.5 W
	Resistance	0 - 20 Ω		
Load regulation ±(%of Output+Offset)	Voltage	≤0.01%+1mV		
	Current	≤0.05%+1mA		
Line regulation ±(%of Output+Offset)	Voltage	≤0.02%+2mV		
	Current	≤0.05%+1mA		
Setup resolution	Voltage	1mV		
	Current	10uA		
	OVP	10 mV		
	Resistance	1mΩ		
Readback resolution	Voltage	1mV		
	Current	100mA Range	1uA	
		100uA Range	1nA	
Setup accuracy （one year, 25°C±5°C) ±(%of Output+Offset)	Voltage	≤0.02%+3mV		
	Current	≤0.05%+50uA [3]		
	OVP	0.5V [1]		
	Resistance	≤0.1%+50mΩ		
Readback accuracy （one year, 25°C±5°C) ±(%of Output+Offset)	Voltage	≤0.02%+2mV		
	Current	100mA Rang	≤0.05%+50uA	
		100uA Rang	≤0.05%+50nA [4]	
Ripple (20Hz -20MHz)	Voltage	≤ 3mVp-p / 1 mV rms		
	Current	≤2uArms		
Setup Temp.coefficient (%of Output+Offset)/℃	Voltage	0.01%+0.2mV		
	Current	0.01%+2uA		
	OVP	0.01%+50 mV		
	Resistance	0.02%+5mΩ		
Readback Temp.coefficient (%of Output+Offset)/℃	Voltage	0.01%+0.2mV		
	Current	100mA Range	0.015%+5uA	
		100uA Range	0.01%+10nA [4]	
Rise time （No-load ）	Voltage	≤1mS [2]		
Rise time （150R load）	Voltage	≤1mS [2]		
Fall time （ No-load ）	Voltage	15V to 0V	≤1mS [2]	
		Output OFF	≤1S [2]	
Fall time （150R load）	Voltage	15V to 0V	≤0.5mS [2]	

		Output OFF	≤0.5mS [2]
Transient Response Time 50%-100% Load change	Fast mode	50%-100% LOAD	Recovered to 50 mV ≤200uS
Remote Sense Compensation	1V Per each lead		
Command Response Time (Typical)	5mS		
OVP Response Time	≤300uS		
Impedance of the output terminal （output off）（Typical）	CH1: High Impedance	150k ohms	
	CH1: Relay off [5]	≥ 1 GΩ [5]	
	CH2: High Impedance	150k ohms	
Minimum Resistance	Sink Current Mode	≤ 10 Ω	
Setup stability -30min （%of Output +Offset）	Voltage	0.01%+1mV	
	Current	0.01%+20uA	
Setup stability -8h （%of Output +Offset）	Voltage	0.01%+1.5mV	
	Current	0.01%+50uA	
Readback stability-30min （%of Output +Offset）	Voltage	0.01%+1mV	
	Current	0.01%+30uA	
Readback stability-8h （%of Output +Offset）	Voltage	0.01%+1.5mV	
	Current	0.01%+50uA	
AC Input	Voltage 1	110V±10%	
	Voltage 2	220V±10%	
	Frequency	47HZ-63HZ	
Fuse specification	Voltage 1	3.15AT	
	Voltage 2	1.6AT	
Power Factor	0.7 Max		
Maximum input current	2A		
Maximum input apparent power	100VA		
Storage temperature	-10℃~70℃		
Protective function	OVP/OCP/OTP		
standard Interface	GPIB/USB/LAN		
Isolation (output to ground)	100Vdc		
Working temperature	0~40℃		
Dimension (mm)	226mmW*88.2mmH*476.26mmD		
Weight(net)	9Kg		

DVM		
Measurement range	-20V — +20V	
Measurement range (refer to the power supply output terminal)	Output 0V～20V	< ±20V either input to output+
	Output -20V～0V [5]	< ±20V either input to output- [5]
Display accuracy	0.02%+3mV	
Display resolution	1mV	
Display Temp.coefficient (%of Intput+Offset)/℃	0.002%+0.2mV	
Display stability-30min （%of Output +Offset）	0.02%+1mV	
Display stability-8 h （%of Output +Offset）	0.02%+2 mV	
Input Common-mode voltage	< 100Vdc to ground	
Common-mode voltage rejection	≥ 80 dB	

Input impedance	4.3MΩ ± 1%

[1] Maximum error of OVP precision at power supply terminal under full load.

[2] The output polarity is unchanged, the time that the power output value changes from 10% to 90%.

[3] The Minimum value of CC setting is 50uA.

[4] The current readback accuracy of the low Range is measured under constant voltage mode.

[5] The CH2 doesn't support Relay off function.

Parameters		IT6431	
Rated values (0 °C-40 °C)	Voltage	-15V-0V,0-15V	
	Current	±10 A	
	Power	150 W	
	Resistance	0 - 1 Ω	
Load regulation ±(%of Output+Offset)	Voltage	≤0.01%+3.5mV	
	Current	≤0.05%+2mA	
Line regulation ±(%of Output+Offset)	Voltage	≤0.02%+2mV	
	Current	≤0.05%+1mA	
Setup resolution	Voltage	1mV	
	Current	1mA	
	OVP	10 mV	
	Resistance	1mΩ	
Readback resolution	Voltage	1mV	
	Current	10A Range	1mA
	Voltage	20mA Range	1uA
Setup accuracy （one year、25°C±5°C) ±(%of Output+Offset)	Current	≤0.02%+3mV	
	Voltage	≤0.05%+5mA (*3)	
	OVP	0.5V (*1)	
	Resistance	≤0.1%+3mΩ	
Readback accuracy （one year、25°C±5°C) ±(%of Output+Offset)	Voltage	≤0.02%+3mV	
	10A Range	≤0.05%+4mA	
	20mA Range	≤0.05%+5uA (*5)	
Ripple (20Hz -20MHz)	Voltage	≤ 4mVp-p / 1 mV rms	
	Current	≤5mArms	
Setup Temp.coefficient (%of Output+Offset)/℃	Voltage	0.005%+0.4mV	
	Current	0.015%+0.3mA	
	OVP	0.01%+50 mV	
	Resistance	0.02%+0.5mΩ	
Readback Temp.coefficient (%of Output+Offset)/℃	Voltage	0.005%+0.3mV	
	Current	10A Range	0.015%+0.2mA
		20mA Range	0.005%+0.5 uA (*5)
Rise time (Fast mode No-load)	Voltage	≤150uS (*2)	
Rise time （Fast mode Full-load）	Voltage	≤150uS (*2)	
Fall time	Voltage	≤150uS (*2) (*4)	

（Fast mode No-load）			
Fall time (Fast mode Full-load)	Voltage	Change of setting value	≤150uS (*2)
		Set output off	≤50uS (*2) (*6)
Rise time （Full-load）	Current	Fast mode	≤150uS
		Normal mode	≤10mS
Transient Response Time 50%-100% Load change	Fast mode 50%-100% LOAD	Recovered to 50 mV	≤30uS
Remote Sense Compensation	1V Per each lead		
Command Response Time (Typical)	5mS		
OVP Response Time	≤80uS		
Impedance of the output terminal （output off）（Typical）	Relay output Normal	130k ohms	
	Relay output Battery	≥ 1 GΩ	
Minimum Resistance	Sink Current Mode	≤ 0.3 Ω	
Setup stability -30min （%of Output +Offset）	Voltage	0.01%+1mV	
	Current	0.01%+2mA	
Setup stability -8h （%of Output +Offset）	Voltage	0.01%+1.5mV	
	Current	0.01%+3mA	
Readback stability-30min （%of Output +Offset）	Voltage	0.01%+1mV	
	Current Voltage	10A Range	0.01%+2mA
		20mA Range	0.01%+3uA (*5)
Readback stability-8h （%of Output +Offset）	Current	0.01%+1.5mV	
	Voltage	10A Range	0.01%+3mA
		20mA Range	0.01%+4uA (*5)
AC Input	Voltage 1	110V±10%	
	Voltage 2	220V±10%	
	Frequency	47HZ-63HZ	
Fuse specification	Voltage 1	5A	
	Voltage 2	2.5A	
Power Factor	0.7 Max		
Maximum input current	5A		
Maximum input apparent power	500VA		
Storage temperature	-10℃~70℃		
Protective function	OVP/OCP/OTP/RVP		
standard Interface	GPIB/USB/LAN		
Isolation (output to ground)	100Vdc		
Working temperature	0~40℃		
Dimension (mm)	226mmW*88.2mmH*476.26mmD		
Weight(net)	8Kg		
DVM			
Measurement range	-20V — +20V		
Measurement range (refer to the power supply output terminal)	Output 0V - 15V	< ±35V either input to output+	
	Output -15V – 0V	< ±35V either input to output-	
Display accuracy	0.02%+3mV		
Display resolution	1mV		
Display Temp.coefficient (%of Intput+Offset)/℃	0.002%+0.2mV		
Display stability-30min （%of Output +Offset）	0.02%+1mV		
Display stability-8 h （%of Output +Offset）	0.02%+2 mV		
Input Common-mode	< 100Vdc to ground		

voltage	
Common-mode voltage rejection	≥ 80 dB
Input impedance	4.5MΩ

(*1) Maximum error of OVP precision at power supply terminal under full load.

(*2) Under Fast mode, the output polarity is unchanged, the time that the power output value changes from 10% to 90%.

(*3) The Minimum value of CC setting is 10mA.

(*4) The voltage setting value will change to 0V under power supply output is 15V.

(*5) The current readback accuracy of the 20mA Range is measured under constant voltage mode.

(*6) Set output off.

Parameters		IT6432	
Rated values (0 °C-40 °C)	Voltage	-30V-0V,0-30V	
	Current	±5 A	
	Power	150 W	
	Resistance	0 - 1 Ω	
Load regulation ±(%of Output+Offset)	Voltage	≤0.01%+2mV	
	Current	≤0.05%+1mA	
Line regulation ±(%of Output+Offset)	Voltage	≤0.02%+2mV	
	Current	≤0.05%+1mA	
Setup resolution	Voltage	1mV	
	Current	0.1mA	
	OVP	10 mV	
	Resistance	1mΩ	
Readback resolution	Voltage	1mV	
	Current	5A Range	0.1mA
		5mA Range	100nA
Setup accuracy （one year、25°C±5°C) ±(%of Output+Offset)	Voltage	≤0.02%+3mV	
	Current	≤0.05%+3mA (*3)	
	OVP	0.5V (*1)	
	Resistance	≤0.1%+3mΩ	
Readback accuracy （one year、25°C±5°C) ±(%of Output+Offset)	Voltage	≤0.02%+3mV	
	5A Range	≤0.05%+3mA	
	5mA Range	≤0.05%+2uA (*5)	
Ripple (20Hz -20MHz)	Voltage	≤ 4mVp-p / 1 mV rms	
	Current	≤1mArms	
Setup Temp.coefficient (%of Output+Offset)/℃	Voltage	0.005%+0.4mV	
	Current	0.01%+0.2mA	
	OVP	0.01%+50 mV	
	Resistance	0.02%+0.5mΩ	
Readback Temp.coefficient (%of Output+Offset)/℃	Voltage	0.005%+0.3mV	
	Current	5A Range	0.015%+0.1mA
		5mA Range	0.005%+0.3 uA (*5)
Rise time (Fast mode No-load)	Voltage	≤150uS (*2)	
Rise time	Voltage	≤150uS (*2)	

（Fast mode Full-load）			
Fall time （Fast mode No-load）	Voltage	≤150uS (*2) (*4)	
Fall time (Fast mode Full-load)	Voltage	Change of setting value	≤150uS (*2)
		Set output off	≤50uS (*2) (*6)
Rise time （Full-load）	Current	Fast mode	≤150uS
		Normal mode	≤10mS
Transient Response Time 50%-100% Load change	Fast mode 50%-100% LOAD	Recovered to 50 mV	≤30uS
Remote Sense Compensation	1V Per each lead		
Command Response Time (Typical)	5mS		
OVP Response Time	≤80uS		
Impedance of the output terminal （output off）（Typical）	Relay output Normal	200k ohms	
	Relay output Battery	≥ 1 GΩ	
Minimum Resistance	Sink Current Mode	≤ 0.7 Ω	
Setup stability -30min （%of Output +Offset）	Voltage	0.01%+1mV	
	Current	0.01%+1mA	
Setup stability -8h （%of Output +Offset）	Voltage	0.01%+1.5mV	
	Current	0.01%+1.5mA	
Readback stability-30min （%of Output +Offset）	Voltage	0.01%+1mV	
	Current	5A Range	0.01%+1mA
	Voltage	5mA Range	0.01%+2uA (*5)
Readback stability-8h （%of Output +Offset）	Current	0.01%+1.5mV	
	Voltage	5A Range	0.01%+1.5mA
		5mA Range	0.01%+3uA (*5)
AC Input	Voltage 1	110V±10%	
	Voltage 2	220V±10%	
	Frequency	47HZ-63HZ	
Fuse specification	Voltage 1	5A	
	Voltage 2	2.5A	
Power Factor	0.7 Max		
Maximum input current	5A		
Maximum input apparent power	500VA		
Storage temperature	-10℃~70℃		
Protective function	OVP/OCP/OTP/RVP		
standard Interface	GPIB/USB/LAN		
Isolation (output to ground)	100Vdc		
Working temperature	0~40℃		
Dimension (mm)	226mmW*88.2mmH*476.26mmD		
Weight(net)	8Kg		
DVM			
Measurement range	-30V — +30V		
Measurement range (refer to the power supply output terminal)	Output 0V - 30V	< ±35V either input to output+	
	Output -30V – 0V	< ±35V either input to output-	
Display accuracy	0.02%+3mV		
Display resolution	1mV		
Display Temp.coefficient (%of Intput+Offset)/℃	0.002%+0.2mV		
Display stability-30min （%of Output +Offset）	0.02%+1mV		
Display stability-8 h	0.02%+2 mV		

（%of Output +Offset）	
Input Common-mode voltage	< 100Vdc to ground
Common-mode voltage rejection	≥ 80 dB
Input impedance	4.5MΩ

(*1) Maximum error of OVP precision at power supply terminal under full load.

(*2) Under Fast mode, the output polarity is unchanged, the time that the power output value changes from 10% to 90%.

(*3) The Minimum value of CC setting is 2mA.

(*4) The voltage setting value will change to 0V under power supply output is 30V.

(*5) The current readback accuracy of the 20mA Range is measured under constant voltage mode.

(*6) Set output off.

Parameters		IT6432S	
Rated values (0 °C-40 °C)	Voltage	-30V-0V,0-30V	
	Current	±21m A	
	Power	0.63 W	
	Resistance	0-20 Ω	
Load regulation ±(%of Output+Offset)	Voltage	≤0.01%+1mV	
	Current	≤0.05%+0.05mA	
Line regulation ±(%of Output+Offset)	Voltage	≤0.02%+1mV	
	Current	≤0.05%+0.05mA	
Setup resolution	Voltage	1mV	
	Current	10uA	
	OVP	1 mV	
	Resistance	10mΩ	
Readback resolution	Voltage	1mV	
	Current	21mA Range	1uA
		100uA Range	1nA
Setup accuracy （one year、25°C±5°C) ±(%of Output+Offset)	Voltage	≤0.02%+3mV	
	Current	≤0.05%+10uA	
	OVP	0.5V [1]	
	Resistance	≤0.1%+50mΩ	
Readback accuracy （one year、25°C±5°C) ±(%of Output+Offset)	Voltage	≤0.02%+2mV	
	21mA Range	≤0.05%+10uA	
	100uA Range	≤0.05%+50nA [4]	
Ripple (20Hz -20MHz)	Voltage	1.5kR Load	≤ 3mVp-p / 0.6 mV rms
	Current	200R Load	≤1uArms
Setup Temp.coefficient (%of Output+Offset)/℃	Voltage	0.01%+0.2mV	
	Current	0.01%+2uA	
	OVP	0.1%+50mV	

	Resistance	0.02%+5mΩ	
Readback Temp.coefficient (%of Output+Offset)/℃	Voltage	0.01%+0.2mV	
	Current	100mA Range	0.015%+5uA
		100uA Range	0.01%+10nA [4]
Rise time （No-load ）	Voltage	≤4mS [2 3]	
Rise time（1.5K load）	Voltage	≤4mS [2 3]	
Fall time （ No-load ）	Voltage	Set Output-off Normal ≤10mS [2 3]	
		Set 30V To 0V ≤4mS [2]	
Fall time （1.5K load ）	Voltage	Set Output-off Normal ≤4mS [3]	
		Set 30V To 0V ≤4mS [2]	
Transient Response Time 50%-100% Load change	Fast mode Load Change Recovered to 30 mV ≤200uS [5]		
Remote Sense Compensation	1V Per each lead		
Command Response Time (Typical)	5mS		
OVP Response Time	≤1mS		
mpedance of the output terminal （output off）（Typical）	Relay output Normal	≤ 140k ohms	
	Relay output Battery	≥ 1 GΩ	
Minimum Resistance	Sink Current Mode ≤ 20 Ω		
Setup stability -30min （%of Output +Offset）	Voltage	0.01%+1mV	
	Current	0.01%+10uA	
Setup stability -8h （%of Output +Offset）	Voltage	0.01%+1.5mV	
	Current	0.01%+10uA	
Readback stability-30min （%of Output +Offset）	Voltage	0.01%+1mV	
	Current	0.01%+10uA	
Readback stability-8h （%of Output +Offset）	Voltage	0.01%+1.5mV	
	Current	0.01%+10uA	
AC Input	Voltage 1	110V±10%	
	Voltage 2	220V±10%	
	Frequency	47HZ-63HZ	
Fuse specification	Voltage 1	3.15AT	
	Voltage 2	1.6AT	
Power Factor	0.7 Max		
Maximum input current	1A		
Maximum input apparent power	200VA		
Storage temperature	-10℃~70℃		
Protective function	OVP/OCP/OTP		
standard Interface	GPIB/USB/LAN		
Isolation (output to ground)	100Vdc		
Working temperature	0~40℃		
Dimension (mm)	226mmW*88.2mmH*476.26mmD		
Weight(net)	8Kg		

DVM		
Measurement range	-30V — +30V	
Measurement range (refer to the power supply output terminal)	Output 0V - 30V	< ±35V either input to output+
	Output -30V – 0V	< ±35V either input to output-
Display accuracy	0.02%+4mV	
Display resolution	1mV	

Display Temp.coefficient (%of Intput+Offset)/℃	0.002%+0.2mV
Display stability-30min （%of Output +Offset）	0.02%+1mV
Display stability-8 h （%of Output +Offset）	0.02%+2 mV
Input Common-mode voltage	< 100Vdc to ground
Input impedance	< 4.5MΩ

[1] Maximum error of OVP precision at power supply terminal under full load.

[2] Under Fast mode, the output polarity is unchanged.

[3] The time that the power output value changes from 10% to 90%.

[4] The current readback accuracy of the 100uA Range is measured under constant voltage mode.

[5] Set 30V/21mA , Output on .Load change 1.5k to 3k,or 3k to 1.5k

Parameters		IT6433	
Rated values (0 °C-40 °C)	Voltage	-60V-0V,0-60V	
	Current	±2.5 A	
	Power	150 W	
	Resistance	0 - 1 Ω	
Load regulation ±(%of Output+Offset)	Voltage	≤0.01%+2mV	
	Current	≤0.05%+1mA	
Line regulation ±(%of Output+Offset)	Voltage	≤0.02%+2mV	
	Current	≤0.05%+1mA	
Setup resolution	Voltage	1mV	
	Current	0.1mA	
	OVP	10 mV	
	Resistance	1mΩ	
Readback resolution	Voltage	1mV	
	Current	2.5A Range	0.1mA
	Voltage	5mA Range	100nA
Setup accuracy （one year、25°C±5°C) ±(%of Output+Offset)	Current	≤0.02%+4mV	
	Voltage	≤0.05%+2mA (*3)	
	OVP	0.5V (*1)	
	Resistance	≤0.1%+3mΩ	
Readback accuracy （one year、25°C±5°C) ±(%of Output+Offset)	Voltage	≤0.02%+4mV	
	2.5A Range	≤0.05%+2mA	
	5mA Range	≤0.05%+2uA (*5)	
Ripple (20Hz -20MHz)	Voltage	≤ 5mVp-p / 1 mV rms	
	Current	≤1mArms	
Setup Temp.coefficient (%of Output+Offset)/℃	Voltage	0.005%+0.5mV	
	Current	0.01%+0.2mA	
	OVP	0.01%+60 mV	
	Resistance	0.02%+0.5mΩ	
Readback Temp.coefficient (%of Output+Offset)/℃	Voltage	0.005%+0.4mV	
	Current	2.5A Range	0.015%+0.1mA

		5mA Range	0.005%+0.3 uA (*5)
Rise time (Fast mode No-load)	Voltage	≤200uS (*2)	
Rise time （Fast mode Full-load）	Voltage	≤200uS (*2)	
Fall time （Fast mode No-load）	Voltage	≤200uS (*2)	
Fall time (Fast mode Full-load)	Voltage	Change of setting value	≤200uS (*2)
		Set output off	≤100uS (*2)
Rise time （Full-load）	Current	Fast mode	≤200uS
		Normal mode	≤10mS
Transient Response Time 50%-100% Load change	50%-100% LOAD	Recovered to 50 mV	≤20uS
Remote Sense Compensation	1V Per each lead		
Command Response Time (Typical)	5mS		
OVP Response Time	≤80uS		
Impedance of the output terminal （output off）（Typical）	Relay output Normal	400k ohms	
	Relay output Battery	≥ 1GΩ	
Minimum Resistance	Sink Current Mode	≤ 1 Ω	
Setup stability -30min （%of Output +Offset）	Voltage	0.01%+1mV	
	Current	0.01%+1mA	
Setup stability -8h （%of Output +Offset）	Voltage	0.01%+2mV	
	Current	0.01%+1.5mA	
Readback stability-30min （%of Output +Offset）	Voltage	0.01%+1mV	
	Current	5A Range	0.01%+1mA
	Voltage	5mA Range	0.01%+2uA (*5)
Readback stability-8h （%of Output +Offset）	Current	0.01%+2mV	
	Voltage	5A Range	0.01%+1.5mA
		5mA Range	0.01%+3uA (*5)
AC Input	Voltage 1	110V±10%	
	Voltage 2	220V±10%	
	Frequency	47HZ-63HZ	
Fuse specification	Voltage 1	5A	
	Voltage 2	2.5A	
Power Factor	0.7 Max		
Maximum input current	5A		
Maximum input apparent power	500VA		
Storage temperature	-10℃~70℃		
Protective function	OVP/OCP/OTP/RVP		
standard Interface	GPIB/USB/LAN		
Isolation (output to ground)	100Vdc		
Working temperature	0~40℃		
Dimension (mm)	226mmW*88.2mmH*476.26mmD		
Weight(net)	8Kg		
DVM			
Measurement range	-60V — +60V		
Measurement range (refer to the power supply output terminal)	Output 0V - 60V	< ±65V either input to output+	
	Output -60V – 0V	< ±65V either input to output-	
Display accuracy	0.02%+5mV		
Display resolution	1mV		
Display Temp.coefficient	0.002%+0.3mV		

(%of Intput+Offset)/℃	
Display stability-30min （%of Output +Offset）	0.02%+1mV
Display stability-8 h （%of Output +Offset）	0.02%+2 mV
Input Common-mode voltage	< 100Vdc to ground
Common-mode voltage rejection	≥ 80 dB
Input impedance	4MΩ

(*1) Maximum error of OVP precision at power supply terminal under full load.

(*2) Under Fast mode, the output polarity is unchanged, the time that the power output value changes from 10% to 90%.

(*3) The Minimum value of CC setting is 2mA.

(*4) The voltage setting value will change to 0V under power supply output is 60V.

(*5) The current readback accuracy of the 5mA Range is measured under constant voltage mode.

(*6) Set output off.

*The above specifications may be subject to change without prior notice.